MDOT
Michigan Department of Transportation

ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
SEPTEMBER 2, 1999 - 9:00 A.M.
EXECUTIVE CONFERENCE ROOM

Present:	C. T. Maki	G. D. Taylor	J. D. Culp
	C. Roberts	J. D. O'Doherty	S. Bower
	T. E. Davies	J. W. Reincke	T. Fort
	M. H. Frankhouse	M. Van Port Fleet (P. F. Miller)	
Guests:	J. T. LaVoy	T. Myers	A. Uzcategui
	C. Bleech	G. Etelamaki	R. D. Till

OLD BUSINESS

1. **Approval of the Minutes of the August 5, 1999, Meeting - C. T. Maki**

   Minutes of the August 5, 1999, meeting were approved as written.

2. **Operating Instructions for Scoping of Road and Bridge Projects to Meet the Current AASHTO Vertical Clearance Standards - M. Van Port Fleet**

   Mark Van Port Fleet reviewed the critical points and highlights of the proposed operating instructions for scoping road and bridge projects to ensure compliance with the AASHTO vertical clearance standards. Tom Fort indicated that the FHWA is comfortable with the proposed process, however, they still have a minor concern about the vertical under clearance treatment on 3R projects. Tom Maki requested a letter of support from FHWA and tabled the issue until the October 8, 1999, meeting. He indicated the issue will be discussed at the Region Engineer Meeting on September 28.

NEW BUSINESS

1. **EOC Approval of Bureau of Highway Technical Services' Division Standards, Standard Plans, Procedure Manuals, Sampling Guides, Test Methods, Traffic and Safety Notes, etc. - J. D. Culp**

   There are many standards established by the Lansing divisions that are not reviewed and approved by EOC. The issue of management support is raised when industry challenges a standard practice or procedure that does not have EOC approval. The Construction and Technology Division maintains 11 standards and recommends that all Lansing divisions prepare a similar comprehensive list of their standards for EOC review.

ACTION: The Lansing divisions will submit a list of their standards for review and consideration at the October 8, 1999, EOC meeting. The list should indicate who currently reviews and approves the documents.

2. **Cantilever Sign Supports - R. D. Till**

Biennial inspections of our cantilever sign supports indicated that horizontal gusset plate terminations at the arm to pole connection on some supports are cracking. The majority of crack occurrences (95 percent) are on Type G and Type H cantilevers. To date, more than 65 cantilevers have been removed because of cracked horizontal gusset plates. A retrofit procedure has been designed and tested. It is recommended that funding (estimated $200,000 for construction) be established for retrofitting the remaining 380 Type G and H cantilevers.

It has been noted that the use of cantilever sign supports continue to propagate. Restricting the use of cantilevers was emphasized by management following the collapse of two cantilevers in early 1990. Cantilever sign supports are sometimes being installed where an overhead truss bridge or a breakaway ground mount sign support could be used. It was also pointed out that there is no current, accurate inventory on cantilevers.

ACTION: Effective immediately, the use of Type G and Type H cantilevers is to be discontinued.

An instructional memorandum will be issued restricting the use of other types of cantilevers sign supports to only where absolutely necessary.

Funding will be provided to retrofit and repair the remaining Type G and H cantilever gusset plates. The estimated cost is $200,000, plus engineering and contingencies.

The inspection program for cantilevers is important and will continue.

The Maintenance Division will assess the updating of the sign support inventory data base.

3. **Pavement Selection: M-14 Reconstruction, C.S. 81105/38009 - S. Bower/C. Bleech**

A Life Cycle Cost Analysis was performed on the two pavement rehabilitation alternates, including Alternate 1, a flexible bituminous pavement, Alternate 2, a jointed plain concrete pavement.

The Pavement Selection Review Committee reviewed the analysis and Alternate 2 having the lowest Equivalent Uniform Annual Cost was recommended for final approval by EOC.

Alternate 2 is approved. The pavement design and cost analysis are as follows:

280 mm . . . . . Jointed Plain Concrete Pavement (4.5m Joint Spacing)
140 mm . . . . . Bituminous Mix 4C & 3C (Shoulders)
100 mm . . . . . Open Graded Drainage Course Geotextile Separator
150 mm . . . . . Open Graded Underdrains
254 mm . . . . . Sand Subbase

Present Value Initial Construction Costs $392,801/Kilometer
Present Value Initial User Costs $478,928/Kilometer
Present Value Maintenance Costs $34,097/Kilometer

Equivalent Uniform Annual Cost $41,543/Kilometer

NOTE: This project is proposed as the pilot project for the performance warranty specification being developed with MCPA.

4. **Pavement Selection: I-96 at M-6 Reconstruction, C.S. 41024/51908 - S. Bower/ C. Bleech**

A Life Cycle Cost Analysis was performed on the two pavement rehabilitation alternates, including Alternate 1, a flexible bituminous pavement, Alternate 2, a jointed plain concrete pavement.

The Pavement Selection Review Committee reviewed the analysis and Alternate 2 having the lowest Equivalent Uniform Annual Cost was recommended for final approval by EOC.

260 mm . . . . . Jointed Plain Concrete Pavement (4.5m Joint Spacing)
140 mm . . . . . Bituminous Mix 4C & 3C (Shoulders)
100 mm . . . . . Open Graded Drainage Course Geotextile Separator
150 mm . . . . . Open Graded Underdrains
280 mm* . . . . . Existing Sand Subbase (*Trim to Grade)

Present Value Initial Construction Costs $343,116/Kilometer
Present Value Initial User Costs . . . . . N/A
Present Value Maintenance Costs $31,493/Kilometer

Equivalent Uniform Annual Cost $17,180/Kilometer

5. **MSU Final Report, *An Evaluation and Calibration of MDOT's Work Zone Delay Model* - J. D. O'Doherty/I Gedaoun**

Removed from the agenda.

(Signed Copy on File at C&T/Secondary)
Jon W. Reincke, Secretary
Engineering Operations Committee

JWR:kat

cc: EOC Members
Region Engineers

J. R. DeSana	R. J. Risser, Jr. (MCPA)	J. Murner (MRPA)	T. L. Nelson
R. J. Lippert, Jr.	A. C. Milo (MRBA)	J. Ruszkowski	R. D. Till
D. L. Smiley	J. Becsey (MAPA)	C. Libiran	M. Frierson
M. Nystrom (AUC)	D. Hollingsworth (MCA)	G. J. Bukoski	C. W. Whiteside
M. Newman (MAA)	J. Steele (FHWA)	K. Rothwell	M. P. Krause